REMARKS/ARGUMENTS

. Claims 11 - 17 have been amended. No new matter has been added.

Reconsideration of the rejection of Claims 12, 13, 16 and 17 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a was as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, is requested, in light of the following arguments.

Claims 12, 13, 16 and 17 have been rewritten in dependent form to contain reference to a claim previously set forth and incorporates the limitations of the claim to which it refers.

Reconsideration of the rejection of Claims 11-14 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, is requested, in light of the following arguments.

Claims 11 and 14 have been amended in response to the Examiner's kind suggestions.

Reconsideration of the rejection of Claims 11-17 and 17 under 35 U.S.C. 103(a) as being unpatentable over Advocate, Jr. et al. (U.S. 5,904,156) in view of Aigo (U.S. 5,014,727), is requested, in light of the following arguments.

Briefly, applicants wish to point out the claimed invention which is a novel and cost-effective process for stripping and cleaning organic coatings. The removal of residual glaze from, "hard to get to", sidewalls formed in etched metallic layers of semiconductor wafers. Cleaning is accomplished while the wafers are contained in a carrier cassette and immersed in a liquid chemical. The use of a quartz plate of a design with a sinuous groove having a plurality of holes in each fold of the windings. The period of the windings matches the spacing between the wafers in the cassette. The holes in the quartz plate form a drill jig guide, which provide the use of a variety of drills of different diameters.

A continuous length of flexible hose is inserted into the sinuous groove windings and holes of a prescribed diameter drilled into the topside of the tubing. The drilling is guided by the drill jig holes in the quartz plate. One end of the tubing is connected to a pressure regulated gas and the other end plugged. The gas exits the tubing through the drilled holes, bubbling up while scrubbing the boundary surfaces of each wafer. The pressure regulated gas implies that a range of pressures may be used within the same stripping or cleaning cycle, intermittently changing from an aggressive scrubbing to a soaking wash. This type of action is required to break the cohesive bond of the photoresist from the hidden crevices.

While Advocate et al. teaches a method of removal of a film of photoresist, which can be utilized in semiconductor technology and particularly for the removal of

photoresist from the vicinity of C4 structures. Advocate's method is directed towards stripping photoresist from a substantially planar object with C4 structures as opposed to the cleaning of organic residue from pockets and sidewalls which are analogous to narrow spaced and deep walled canyons.

While Aigo teaches a manifold with a plurality of pressurized tubes, each tube with a fine mesh filter disposed at each end. The egress of gas into the stripping solution generates a continuous stream of bubbles rising from the bottom to the top of the solution, it is not simply the combination of Advocate and Aigo, it is the total combination of elements of the claimed invention, primarily the drill jig guide of the quartz plate that gives the user the ability to prescribe the hole diameters drilled in the flexible tubing, as claimed in Claim 7 to make this operable. The total combination of elements of the claimed invention, particularly, the drill jig guide and the pressure regulated gas provides the necessary process flexbility for reducing the cohesiveness between the photoresist and sidewalls formed in etched metallic layers of semiconductor wafers.

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Furthermore, it is respectfully suggested that the combination of these references cannot be made without reference to Applicant's own claimed invention. None of the reference address the problem of reducing the cohesiveness between the photoresist and sidewalls formed in etched metallic layers of semiconductor wafers. Claims 11 - 17 are believed to be novel and patentable over these various references because there is not

not in claims

sufficient basis for concluding that the combination of claimed elements would have been obvious to one skilled in the art. That is to say, there must be something in the prior art of line of reasoning to suggest that the combination of these various references is desirable. We believe that there is no such basis for the combination. We therefore request Examiner Kornakov to reconsider his rejection in view of these arguments and the amendments to the Claims.

We have reviewed the related art references made of record and have determined that none of these suggest the present claimed invention.

Attached hereto is a marked-up is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned.

"Version with markings to show changes made."

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend claims 11 - 17 as follows:

11. (TWICE AMENDED) A method for removing organic materials from a plurality of substrates having surface patterns with prominent sidewalls comprising the steps of:

providing an open tank containing a liquid chemical;

providing a quartz gas distribution plate [means] submerged in said liquid chemical and supported horizontally by bottom of said tank;

providing a pressure regulated gas supply means connected to said gas distribution plate;

providing a substrate carrier [means] containing a plurality of substrates[,];

submerging and resting said substrate carrier [means] on said gas distribution plate so that [a] said liquid chemical [will] wets all surfaces of said substrates that are [totally submersed and] supported vertically within said substrate carrier;

said gas distribution plate generates and directs gas bubbles [thereunder] between and parallel to each surface[s] of said substrates positioned thereabove, said gas bubbles providing a chemical-mechanical scrubbing.

12. (TWICE AMENDED) The method according to claim 11 [further comprising the steps of:] wherein said [provided] quartz gas distribution plate [means] having a top surface separated from a bottom surface, said bottom surface having a sinuous groove with a flexible tubing urged into and guided by said sinuous groove, each parallel leg of said sinuous groove having a[t least a pair] multiplicity of holes formed through to said top surface, said holes are

used as a drill jig guide for drilling prescribed diameter holes in each leg of said flexible tubing[;], said tubing having a first end connected to a gas supply means and a second end that is capped[;].

13. (TWICE AMENDED) The method according to claim 11 [further comprising the steps of] wherein said [provided] quartz gas distribution plate [means] having a plurality of elongated slot openings extending from the top surface to the bottom surface contiguously disposed between said parallel segments, said slot openings traversing length of said plate, said slot openings facilitate tank cleaning and maintenance.

14. (TWICE AMENDED) The method according to claim 11 wherein [providing said process steps] using a quartz gas distribution plate [means] eliminates photoresist residues in [the hard to get places, such as wafers with top] metal sidewalls that are coated with polymer[, said method is cost effective compared with commercial megasonic or mechanical vibratory methods].

15. (TWICE AMENDED) A method for stripping photoresist from a plurality of semiconductor wafers having top metal lines with prominent sidewalls, comprising the steps of:

providing an open tank containing a liquid chemical;

providing a quartz gas distribution plate [means] submerged in said liquid chemical and supported horizontally by bottom of said tank;

providing a pressure regulated gas supply means connected to said gas distribution plate;

providing a wafer cassette [means] containing a plurality of wafers[,];

submerging and resting said wafer cassette [means] on said gas distribution plate so that [a] said liquid chemical [will] wets all surfaces of said wafers that are [totally submersed and] supported vertically within said wafer cassette;

said gas distribution plate generates and directs gas bubbles [thereunder] between and parallel to each surface[s] of said wafers positioned thereabove, said gas bubbles providing a chemical-mechanical scrubbing.

[15]16. (TWICE AMENDED) The method according to claim 15 further comprising the steps of:] wherein said [provided] quartz gas distribution plate [means] having a top surface separated from a bottom surface, said bottom surface having a sinuous groove with a flexible tubing urged into and guided by said sinuous groove, each parallel leg of said sinuous groove having a[t least a pair] multiplicity of holes formed through to said top surface, said holes are used as a drill jig guide for drilling prescribed diameter holes in each leg of said flexible tubing[;], said tubing having a first end connected to a gas supply means and a second end that is capped[;].

17. (AMENDED) The method according to claim 15 [further comprising the steps of:] wherein said [provided] quartz gas distribution plate [means] having a plurality of elongated slot openings extending from the top surface to the bottom surface contiguously disposed between said parallel segments, said slot openings traversing length of said plate, said slot openings facilitate tank cleaning and maintenance.